# VG-100/110

# **VoIP Telephone Adaptor**

**User Manual** 

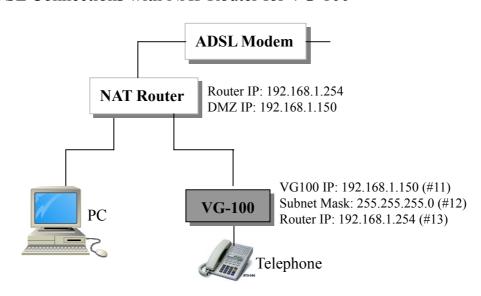
V1.7

# **Quick Guide**

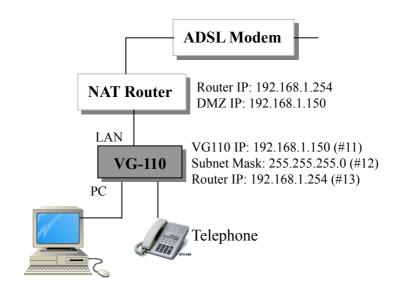
## Step 1: Broadband (ADSL/Cable Modem) Connections For VG-100/110

- A. Connect VG-100/110 RJ45 LAN port to Router/ADSL as one of the following connections.
- B. Connect VG-110 RJ45 PC port to PC using a Category 5 LAN cable.
- C. Connect VG-100/110 RJ11 PHONE port to a Telephone Set.
- D. Connect Power Adaptor to the POWER outlet. After flashing, the POWER LED will be lit.
- E. Pick up the phone, the PHONE LED will be lit, and you should hear a dial tone.
- F. Enable and set NAT router "DMZ" address (e.g. 192.168.1.150) to be used for VG-100/110 IP address.

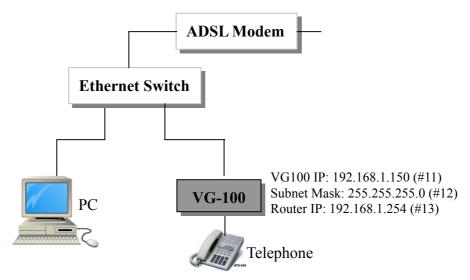
#### a. ADSL Connections with NAT Router for VG-100



#### b. ADSL Connections with NAT Router for VG-110



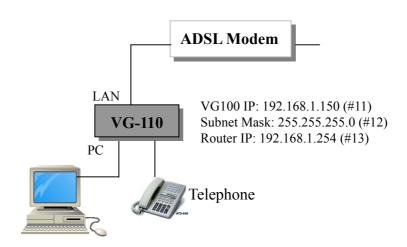
# c. ADSL Connections without Router for VG-100 (refer to PPPoE section in Chapter 9. PC Telnet Command Mode)



- 1. Run From PC: Telnet 192.168.1.150
- 2. Set PPPoE (#051)
- 3. Enter PPPoE Username (#06nnnnnn)
- 4. Enter PPPoE Password (#07xxxxxx)
- 5. Enter "• " or Pick up phone to enable PPPoE

Note: To disable PPPoE, simply press #050# from telephone

# d. ADSL Connections without Router for VG-110 (refer to PPPoE section in Chapter 9. PC Telnet Command Mode)



- 1. Run From PC: Telnet 192.168.1.150
- 2. Set PPPoE (#051)
- 3. Enter PPPoE Username (#06nnnnnn)
- 4. Enter PPPoE Password (#07xxxxxx)
- 5. Enter "•" or Pick up phone to enable PPPoE

Note: To disable PPPoE, simply press #050# from telephone

## Step 2: IP Settings for VG-100/110 with Static IP

- A. Prepare for VG-100/110 IP Address, Subnet Mask, and Router IP Address. (\*)
- B. Pick up the phone, and you should hear a dial tone.
- C. Press #11 + IP Address to enter VG-100/110 IP address

  Example: Press #11061020102004 if VG-100/110 static IP address is 61.20.102.4
- D. Press #12 + Subnet Mask to enter the subnet mask

Example: Press #12255255255000 if subnet mask is 255.255.255.0

E. Press #13 + Router IP Address to enter the Router IP address
Example: Press #13061020102254 if Router IP address is 61.20.102.254

(\*)Note that the static IP address is available from your Internet Service Provider. When connected with NAT router as above for ADSL dynamic IP, the IP Address, Subnet Mask, and Router IP Address are 192.168.1.150, 255.255.255.0, and 192.168.1.254, respectively. Please note that you must press 3 digits for each byte of the IP address.

# Step 3: Making Point-To-Point Static IP Calls

- A. Pick up the phone, and you should hear a dial tone.
- B. Press **061066159236** to call the party with IP address of **61.66.159.236**

In a moment, you should hear the ring back tone, and wait for the called party to answer, or you will hear a busy tone when the dialed number is busy or not available.

# Step 4: Making Point-To-Multiport Gateway Static IP Calls

- A. Pick up the phone, and you should hear a dial tone.
- B. Press **061219023102900** to call the VG400 gateway with static IP address **61.219.23.102** at extension port **900**.

In a moment, you should hear the ring back tone, and wait for the called party to answer, or you will hear a busy tone when the dialed number is busy or not available.

# Step 5: Making Point-To-Point Gatekeeper Dynamic IP Calls

- A. The PHONE LED should be flashing to indicate the VG-100/110 is successfully registered in the Gatekeeper with IP address of #21 command.
- B. Pick up the phone, and you should hear a dial tone.
- C. Press **109** to call the party with alias phone number **109** registered in the gatekeeper. The gatekeeper pre-registered alias phone number is shown at the bottom of each VG-100/110.

For more details of Gatekeeper dynamic IP calls, please refer to Chapter 9. PC Telnet Command Modes.

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Introduction 1.

The VG-100/110 is a single port Telephone Adaptor (TA) for Voice over IP (VoIP), and it

supports H.323, and SIP (optional) Protocols. Connecting to the Internet with a plain old

telephone set (POTS), the VG-100 can make a voice call over the Internet from one IP to

another one.

With additional PC LAN port comparing to VG-100, the VG-110 allow connection to a

Notebook PC when using in the office. With portable and user friendly design, the VG-100/110

is very suitable for ITSP (Internet Telephony Service Providers) customers and SOHO users to

make a voice call on the Internet.

Note that each VG-100/110 will need an IP address, a subnet mask, and its gateway IP address

These three are available from your Internet service provider.

Access Control (MAC) hardware address is indicated at the bottom of VG-100/110.

2. Features

The VG-100/110 VoIP TA is equipped with one RJ11 connector for POTS, and one RJ45 LAN

connector for Router Connection. There is an extra RJ45 LAN port with VG-110 for

connection to additional Notebook PC. The VG-100/110 features as follows;

Three LED Indicators: POWER, PHONE, LAN

**Direct Static IP Dialing** 

GateKeeper Mode Dialing

PPPoE for Dynamic IP

Hot Line Mode

Remote/Local TFTP Firmware Download/Update

3. Standard Compliances

The VG-100/110 VoIP TA supports for the following standards

VoIP Protocol:

ITU-T H.323

Speech Codec:

ITU-T G.711, G.723, G.729A/B(optional)

Echo Cancellation:

ITU-T G.165/168

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# 4. Packing Contents

Inside the package you should find:

- (1) One VG-100/110 VoIP TA
- (2) One DC Power Adaptor
- (3) One Phone cable
- (4) One LAN cable

Please check if the packing is damaged before unpacking or any component is missing. If so, please contact your distributor.

# 5. LED Indicators

On the front panel of VG-100/110, there are three LED indicators as follows;

Power: On indicates the power is normal

Flashing once every minute indicates Router IP is NOT found

Continuous Flashing indicates PPPoE is NOT working

PHONE: On indicates the telephone is offhook

Continuous Flashing indicates successful Gatekeeper registration for VG-100/110

LAN: LAN activity

Continuous Flashing indicates VoIP is in progress

# 6. Installations & IP Configurations

- 1. Connect VG-100/110 RJ45 LAN port to Router using the Category 5 LAN cable.
- 2. Connect VG-110 RJ45 PC port to Notebook PC using a Category 5 LAN cable.
- 3. Connect VG-100/110 RJ11 PHONE port to a Plain Old Telephone Set (POTS).
- 4. Connect the Power Adaptor (5VDC) to the POWER outlet.
- 5. The POWER and PHONE LED indicators will start flashing for about 10 seconds and OFF for a while, then flashing three times again. After the POWER LED is lit constantly, the VG-100/110 will be ready for configuration and VoIP calls. If the PHONE LED keep flashing, is idle, it indicates that VG-100/110 has successfully registered in the Gatekeeper (Refer to Section 7 & 8 for Gatekeeper Mode).
- 6. Pick up the phone, the PHONE LED will be lit and you should hear a dial tone.
- 7. Prepare for the VG-100/110 an IP address, a Subnet mask, and a Router IP address before making a VoIP call. These three can be available from your Internet Service Provider. The defaults of IP Address, Subnet mask, and Router IP Address for VG-100/110 are 192.168.1.150, 255.255.255.0, and 192.168.1.254.
- 8. Configurations Command modes can be entered from either the telephone or PC Telnet session and can be stored and remains in the flash memory even when the power is off.

## 6.1 IP Configurations From Telephone

- 1) Pick up the phone, the PHONE will be lit and you should hear a dial tone.
- 2) Enter the VG-100/110 an IP Address, a Subnet mask, and a Router IP address as the following.

Press #11 + IP Address

Example: Press #11061020102004 if the VG-100/110 IP Address is 61.20.102.4

Press #12 + Subnet mask

Example: Press #12255255255000 if the Subnet mask is 255.255.255.0

Press #13 + Router IP Address

Example: Press #13061020102254 if the Router IP address is 61.20.102.254

Note that you must press 3 digits for each byte of the IP address.

3) After entering each item, you will hear the dial tone for confirmation. If not, you will hear a busy tone indicating an invalid configuration. The defaults of IP Address, Subnet mask, and Router IP Address for VG-100/110 are 192.168.1.150, 255.255.255.0, and 192.168.1.254, respectively.

# 7. Telephone Keypad Dialing

You may now start making a VOIP call by dialing the IP address directly from the telephone. There are 5 different types of dialing for VG-100/110;

- 1) Direct Static IP Dialing (#200):
  - 12-15 digits for Point-to-Point and Point-to-Multiport Gateway static IP dialing.
- 2) Direct Static IP Dialing + Gatekeeper Mode Dialing (#201):
  - 1-11 digits for Gatekeeper Mode dynamic IP dialing, and 12-15 digits for direct Point-to-Point and Point-to-Multiport Gateway static IP dialing.
- 3) Gatekeeper dialing mode (#202):
  - 1-48 digits for Gatekeeper and Trunk Gateway such as Cisco 5300
- 4) Memory dialing (#80 #99) for stored number dialing
- 5) Hot-line dialing mode (#401): In 3 seconds after offhook, the number in #99 will be dialed.

#### 7.1 Point-to-Point Static IP calls

1) Press the IP address of the party you want to call as the following.

Example: Press **211020102110** to call the party with IP address of **211.20.102.110** 

In 3 seconds, you should hear the ring back tone, and wait for the called party to answer, or you will hear a busy tone when the dialed number is busy or not available.

#### 7.2 Point-to-Multiport Gateway Static IP calls (VG200/400/2400 Series)

1) Press the IP address + the extension port number

Example: Press **061219023102900** to call the party with IP address of **61.219.23.102** at extension port **900**.

In 3 seconds, you should hear the ring back tone, and wait for the called party to answer.

## 7.3 Point-to-Point Gatekeeper Dynamic IP calls

1) Press the Alias Number

Example: Press **112233** to call the party with alias number 112233 registered in the gatekeeper. (Refer to the Gatekeeper Mode in Section 7 & 8.)

In 3 seconds, you should hear the ring back tone, and wait for the called party to answer.

#### 7.4 Memory Dial for IP calls

There are **20** memories for use to store IP Addresses and Alias Numbers for IP calls. To make Memory Dial, simply

Press \*N to dial the IP address/Alias Number stored in the N memory (N=80~99)

Example: Press \*90 to dial the IP address/Alias Number stored in the N=90 memory.

# 8. Telephone Command Modes

The VG-100/110 provides commands to configure for different features and applications when making a VoIP call. Configuration commands can be entered from either the telephone or PC telnet session. This section describes the commands entered from the telephone keypad. Pick up the phone, the PHONE LED will be lit and you should hear a dial tone.

### 8.1 Reset to Default from Telephone

Press #01# to reset the default values for VG-100/110. Note that this does not change the password.

#### 8.2 Set Password

Press #01xxx# to set the "xxx" password into VG-100/110. If you forgot the password when using PC telnet session, you may set a new password from the telephone.

Example: Press #01123# to set the password "123".

### 8.3 Storing IP address and Alias Number for Memory Dial

Press #N+<u>IP Address</u>+# to store IP address into the **N** memory (**N** is from **80** to **99**)

Press #N+Alias Number+# to store alias number into the **N** memory (**N** is from **80** to **99**)

Example: Press #80061020102110# to store the IP address 211.20.102.110 into the N=80 memory.

Example: Press #90112233# to store the alias number 112233 into the N=90 memory.

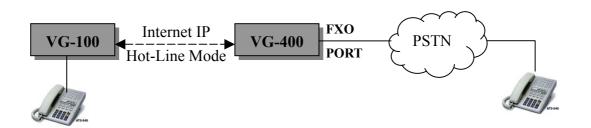
Example: Press #99061219023102900# to store the IP address 61.219.23.102 with extension 900 into the N=99 memory (for Hot-Line mode).

You should hear the dial tone, to confirm for the memory storing.

Note that you need to press the "#" to complete configurations from the telephone set except for the commands #11, #12, #13, #21, which require exact 12 digits.

#### **Hot Line Mode Operations**

Hot Line Mode (#40) allows you to make a direct call at the IP stored in N=99 memory without dialing. When the Hot Line mode is enabled, you may pick up the phone and the VG-100/110 will call the party directly to the preset IP address/alias number in N=99 memory. Hot-Line Mode is very convenient for calling to Public Switching Telephone Network (PSTN) number through Multiport Gateway FXO port.



#### 8.4 Hot Line Mode

Press #400# to disable Hot Line mode (default)

Press #401# to enable Hot Line mode

1. Store the preset IP number in N=99 memory

Example: Press #99211020102110# for IP 211.20.102.110.

Example: Press #99211020102110xxx# for IP 211.20.102.110 ext "xxx"

"xxx" is the VG400 extension port.

#### 2. Enable Hot Line Mode

Example: Press #401#

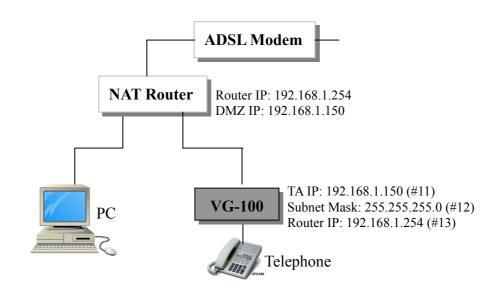
You will hear a dial tone for confirmation and hang up the phone to complete the configuration.

- 3. Pick up the phone. In 3 seconds, the VG-100/110 will automatically call the preset IP number stored in N=99 memory.
- 4. Note that you may disable the Hot-Line mode by picking up the phone and pressing #400# in 3 seconds before the VG-100/110 calling out, and you will hear a dial tone for confirmation. You may also disable Hot-Line mode by PC telnet session in Section 8.

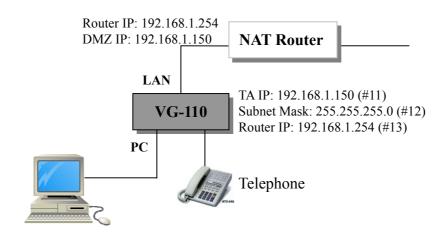
# 9. PC Telnet Command Modes

9.1 Connect VG-100, or VG-110, as one of the following diagrams.

#### a. Standard VG-100 environment



#### b. Standard VG-110 environment



If you forgot the current VG-100/110 IP address, you may enter the new IP address from telephone by using #11 commands.

- 9.2 Key in "telnet 192.168.1.150" from PC Windows [Start] [Run] screen, assuming that the current IP address is 192.168.1.150. The default IP address for VG-100/110 is 192.168.1.150. Note that picking up the phone during the telnet command mode will logout the telnet session.
- 9.3 "password:" prompt will appear in the screen. There is no default telnet password. Please press the "enter" key in PC.
- 9.4 ">" prompt will appear in the screen.
- 9.5 Key in "?" to list the settings as follows.

>?

firmware version: 007b

hardware address: 000926646465/6579301

password #01

volume [0..999] #03820 pppoe [0|1] #050

pppoe username #0686642169@hinet.net

pppoe password #07pppoepassword

reserved [-] #10

ip address #11192168001150
subnet mask #12255255255000
router ip address #13192168001254

voip port number [-] #14
gatekeeper mode [0..2] #201

gatekeeper ip address #21061066159237

gatekeeper id [-] #220penH323 GateKeeper on Gateway

alias name #23VOIP alias number #24112233

endpoint id [-] #2540079e85:8

time to live [0..32]m #261 codec selection [0..2] #300 hotline mode [0|1] #400 stored ip/alias number #80-99:

Scored iprairies number #00 00

#80192168000041

#90112233

OK

>

9.6 To set the password, you may key in as follows.

#### >#01mypassword

OK

9.7 To change the settings, simply enter as follows.

**>#21061066159237** ; for gatekeeper IP address 61.66.159.237

OK

>**#23h3232601b669** ; for alias name "h3232601b669" (max 40 letters)

**OK** ; Note that all-numeric number is not a valid alias name.

>**#24123456** ; for alias phone number "123456" (max 11 digits)

OK

9.8 Enable Gatekeeper mode by entering as follows.

>#201

OK

9.9 Key in "•" to activate the settings and exit or logout the telnet session as follows.

> •

### **Gatekeeper Mode Operations**

Gatekeeper Mode (#20) allows the user to make a direct call to another user with ADSL dynamic IP address registered in the gatekeeper. The VG-100/110 with dynamic IP address will register its current IP address to the gatekeeper under the assigned alias name and alias telephone number. When the Gatekeeper Mode is enabled, you may dial the alias telephone number to call the party with its alias telephone number registered in the gatekeeper.

A Gatekeeper is needed for users with ADSL Dynamic IP. For Gatekeeper (GK) Mode VoIP calls, you need to provide VG-100/110 for the followings; the gatekeeper IP, the alias name, the alias number, and the Time to Live (TTL). The Time To Live defines the time period of VG-100/110 for repeat registration to the gatekeeper. You may display or change the Gatekeeper IP, TA alias name, and alias number from the PC Telnet Commands.

#### 9.10 Gatekeeper Command Mode

Enter #200 to disable gatekeeper mode.

Enter #201 to enable gatekeeper mode (default).

### 9.11 Gatekeeper Registrations

Enter #21+Gatekeeper IP for Gatekeeper IP (12 digits)

Enter #23+Alias Name for TA Alias Name (max 48 letters)

Enter #24+Alias Number for Registered Alias Number (max 48 digits)
Enter #26+Time To Live for Time To Live in minute (2 digits, max 15)

#### Example:

1. Enter #201 ;to Enable Gatekeeper mode

2. Enter #21061066159237 ;for Gatekeeper IP 61.66.159.237

3. Enter #23VOIP ;for Alias Name "VOIP"

4. Enter #24123456 ;for Registered Alias Number 123456

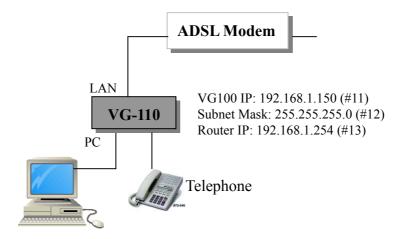
5. Enter #261 ;for Time To Live 1 minutes

After enabling the Gatekeeper mode from PC, then the VG100/110 will register the alias number 123456 to the gatekeeper with IP 61.66.159.237. Also, the PHONE LED will be flashing indicating the VG-100/110 is in Gatekeeper mode. The VG-100/110 will be ready to make a Gatekeeper Dynamic IP call.

Note that you need to press the "#" to complete configurations from the telephone set. it is not needed in PC telnet session.

#### PPPoE for ADSL Dynamic IP

PPPoE (#05) allows VG-100/110 users to connect ADSL dynamic IP without NAT router as follows.



For ADSL dynamic IP users, the Internet Service Provider (ISP) will provide user a PPPoE username and a PPPoE password for connection to Internet. With the username and the password, PPPoE will be able to get a dynamic IP from ISP. To enter the username and the password into VG-100/110, you need to run "telnet 192.168.1.150" from PC Windows [Start] [Run] screen, assuming that the current IP address is 192.168.1.150. The default IP address for VG-100/110 is 192.168.1.150. If you forgot the current VG-100/110 IP address, you may enter the new IP address from telephone set by using #11 commands.

#### **Example:** ADSL dynamic IP with Gatekeeper Mode registration

1. Run From PC: Telnet 192.168.1.150

2. **>#051** Set PPPoE

3. >#06abc@efghijk Enter PPPoE Username "abc@efghijk" 4. >#07xxxxxx Enter PPPoE Password "xxxxxx"

5. **>#201** Set Gatekeeper mode

6. **>#21061066159237** Enter Gatekeeper IP Address "61.66.159.237"

7. **>#22openH323** Enter Gatekeeper ID "openH323"

8. >**#23voip** Enter Alias Name "voip" 9. >**#24123456** Enter Alias Number "123456"

10. > • Exit to enable PPPoE

Note that the new dynamic IP from ISP will replace for the IP 192.168.1.150 after enabling PPPoE, and the "telnet 192.168.1.150" will not be valid any more until disabling PPPoE by pressing #050# from the telephone set.

Now your registered VOIP alias number is 123456, and you may have your friend dial 123456 to call you at this VG-100/110.

# 10. Commands Summary:

# **Entered from Telephone Set (POTS)**

Command	Format	Defaults	Descriptions	Enter From
#01#	#01#		Reset to Defaults	POTS
#01	#01xxxxx#		Set Password xxxxx	POTS
#03	#03+[0999]+#	820	Volume Control	POTS
#05	#05+[0 1]+#	0	PPPoE	POTS
#11	#11+TA IP	192168001150	TA IP Address	POTS
#12	#12+Subnet Mask	255255255000	Subnet Mask	POTS
#13	#13+Router IP	192168001254	Router IP Address	POTS
#20	#20+[02]+#	1 (enabled)	GK Dialing Mode	POTS
#21	#21+GK IP	061066159237	GateKeeper IP Address	POTS
#22	#22+GK id+#		GateKeeper id	POTS
#23	#23+Alias Name+#		Alias Name	POTS
#24	#24+Alias Number+#		Alias Phone Number	POTS
#25	#25+Endpoint id+#		Endpoint id	POTS
#26	#26+[032]+#	1	Time To Live in minute	POTS
#30	#30+[0 1 2]+#	0	Codec Selections	POTS
#40	#40+[0 1]+#	0 (disabled)	Hot Line Mode	POTS
#80	#80+IP/Alias Number+#		Stored IP/Alias Number	POTS
• • •			• • •	POTS
#99	#99+IP/Alias Number+#		Stored IP/Alias Number	POTS
#99	#99+IP+#		Hot Line IP Address	POTS

	Dialing Format	Digits	Descriptions	Enter From
#200	IP or IP+Port Number	12 - 15	Direct Static IP Dialing	POTS
#201	IP or IP+Port Number + Alias Phone Number	12 - 15 + 1 - 11	Direct Static IP Dialing + GK Mode Dialing	POTS
#202	Alias Phone Number	1 - 48	GK Mode Dialing	POTS
*01	*01+IP+F/W Version	18	TFTP Download Server	POTS
*80	*80	3	Dial Stored Number	POTS
		3	• • •	POTS
*99	*99	3	Dial Stored Number	POTS

Note: (1) It is required from the telephone set (POTS) to press the "#" to complete the configuration, and it is not needed from PC telnet session.

# **Entered from PC Telnet session**

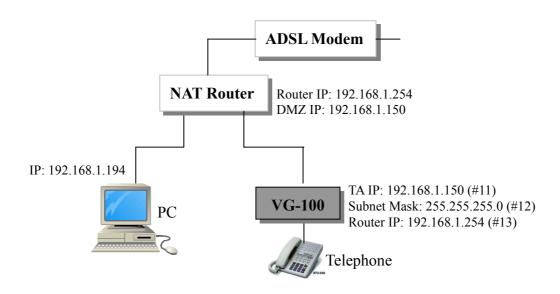
Command	Format	Defaults	Descriptions	Enter From
#01	#01xxxxx		Set Password xxxxx	PC
#03	#03+[0999]	800	Volume Control	PC
#05	#05+[0 1]	0 (disabled)	РРРоЕ	PC
#06	#06+username	Max 48 letters	PPPoE username	PC
#07	#07+password	Max 48 letters	PPPoE password	PC
#11	#11+TA IP	192168001150	TA IP Address	PC
#12	#12+Subnet Mask	255255255000	Subnet Mask	PC
#13	#13+Router IP	192168001254	Router IP Address	PC
#20	#20+[0 1]	1 (enabled)	Disable/Enable GK Mode	PC
#21	#21+GK IP	061066159237	GateKeeper IP Address	PC
#22	#22+GK id		GateKeeper id	PC
#23	#23+Alias Name	Max 48 letters	Alias Name	PC
#24	#24+Alias Number	Max 48 digits	Alias Phone Number	PC
#25	#25+Endpoint id		Endpoint id	PC
#26	#26+[032]	1	Time To Live in minute	PC
#30	#30+[0 1 2]	0	Codec Selections	PC
#40	#40+[0 1]	0 (disabled)	Hot Line Mode	PC
#80	#80+IP/Alias Number	Max 48 digits	Stored IP/Alias Number	PC
			• • •	PC
#99	#99+IP/Alias Number	Max 48 digits	Stored IP/Alias Number	PC
#99	#99+IP		Hot Line IP Address	PC

Note: (1) Power on/off will not reset to default settings.

# 11. Firmware Upgrade/Download Procedures

There are two ways to download and upgrade the firmware for VG-100/110. The first one is to download from the remote TFTP server by using telephone set. The second one is to download from the local PC with built-in TFTP server by using telephone set. The TFTP server will allow the user to download a new firmware for new features updates.

Connect the VG-100/110 to the standard environment of ADSL Dynamic IP with NAT router and Gatekeeper registration as the following diagram.



## Remote Firmware Download from Telephone

- 11.1 Pick up the phone and press #050# to disable PPPoE first for VG-100/110.
- 11.2 Pick up the phone and press the download command \*01 followed by the PC TFTP server IP address and the image file version number.

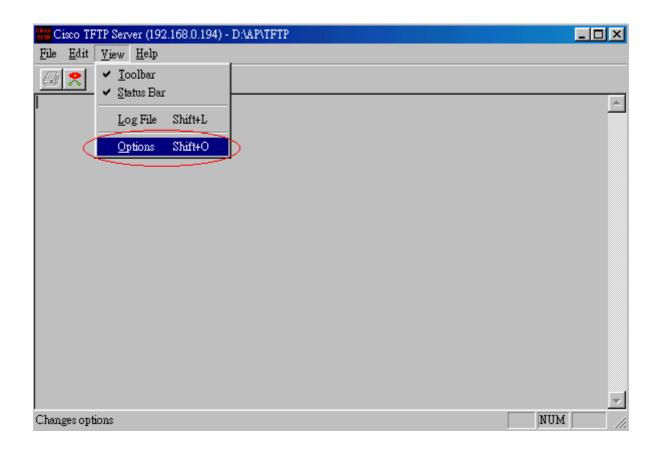
Example: Press \*01061066159237061

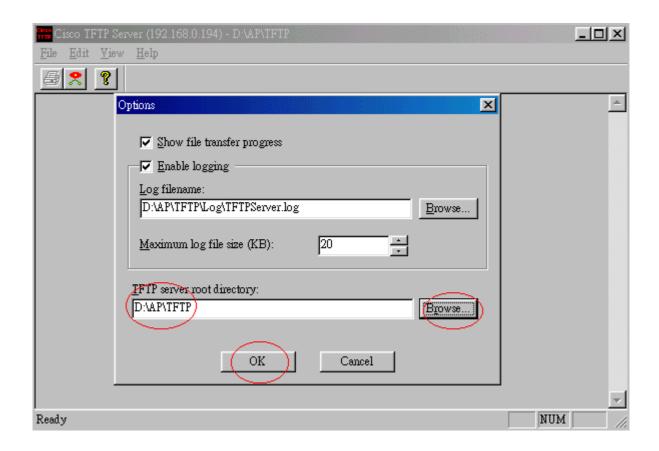
where 61.66.159.237 is the remote TFTP server IP address, and 061 is the F/W version of image file "ydta061.img" in the remote TFTP server.

In a minute, you will hear a dial tone to indicate a successful download. Please hang up to complete the upgrade process. The upgrade will be effective with indication of LED flashing like power on procedure. If you hear a busy tone, the upgrade process fails. In this case, the old version is still in place and valid.

## **Local PC Firmware Download from Telephone**

- 11.3 Make sure that in the PC you have the built-in TFTP server and the upgrading image file with the name of "ydtaxxx.img", which xxx is the F/W version. This upgrade image file can be available your local VG-100/110 dealer.
- 11.4 Open the TFTP server in the PC, and specify the directory of the image file, as the following diagram.





- 11.5 Pick up the phone and press #050# to disable PPPoE first for VG-100/110.
- 11.6 Press the download command \*01 followed by the PC TFTP server IP address and the image file version number.

Example: Press \*01192168001194006

where 192.168.1.194 is the PC TFTP server IP address, and 006 is the F/W version of image file "ydta006.img" in the PC.

In a minute, you will see successful download message from the PC screen and hear a dial tone to indicate a successful download. Please hang up to complete the upgrade process. The upgrade will be effective with indication of LED flashing like power on procedure. If you hear a busy tone, the upgrade process fails. In this case, the old version is still in place and valid.